

Remarks

Entry of the amendments, reconsideration of the application, as amended, and allowance of all pending claims are respectfully requested. Claims 1, 3, 4, 6-9, 11-13, 15-18, 20-22 and 24-34 remain pending.

In the process of analyzing the Examiner's comments, references and citations thereto during the process of responding to the present Office Action, it has become apparent that the Examiner has missed an important aspect of the present invention. **In particular, it is important to note that restoring a file system is not the same thing as restoring data or even the same thing as restoring a file.** In this regard, the Examiner should appreciate that the present invention finds its greatest utility in the event of catastrophic failures such as power outages, earthquakes, floods, etc. In such situations, the entire file system has to be recreated before any files can be written to it. The present invention provides a mechanism in which a file system with limited structure is employed in a unique manner which allows file access during the restore process which typically could take as long as 10 hours. For the best appreciation of the value of the present invention, the Examiner should keep the catastrophic failure scenario fully in mind.

One of the main features of the present invention is the ability to start with a blank set of disks after a failure, restore the actual structure of the file system as of the latest backup including the identities of the files being restored as a name and also as a file id which is used by some programs. The process of restoring files individually then begins from whatever sources from which they may be available. One of the unique aspects of the presently claimed invention is the fact that the file is visible to application programs from the start of the restoration process and that the file is automatically restored immediately upon first access by an application. In the present invention application programs are suspended for the duration of the actual copy of the specific data required by the application at this instant; furthermore, this suspension is transparent to both the application and the user of that application. This is different from the techniques cited by the Examiner which require prior knowledge of which applications use which data and which rely on the ability to **not** schedule the application in the first place both in terms of transparency and in terms of

duration. It is a rare instance in the data processing arts where knowledge of which file is to be accessed by which application; this is rarely known in advance.

In the Office Action dated March 21, 2006 claims 7, 9, 10 and 32 stand as being rejected under 35 U.S.C. § 102(e) as being unpatentable over the published patent application of Kano et al. (US 2003/0135650 A1, published July 17, 2003), hereinafter referred to simply as Kano. Claim 11 stands as being rejected under 35 U.S.C. § 102(b) as being unpatentable based upon the issued patent to Sakaki et al. (U. S. patent 6,230,239 issued May 8, 2001). Claim 12 stands as being rejected under 35 U.S.C. § 102(b) as being unpatentable based upon the issued patent to Mogul (US Patent No. 6,052,764 issued April 18, 2000). Claims 1-6 and 31 stand rejected under 35 U.S.C. § 103(a) based upon Kano et al. and U. S. Patent No. 6,047,294 (issued to Deshayes et al. issued April 4, 2000), hereinafter referred to simply as Deshayes. Claim 8 stands rejected under 35 U.S.C. § 103(a) based upon Kano in view of the issued patent to Cary et al. (U. S. Patent No. 4,875,159 issued October 17, 1989), hereinafter referred to simply as Cary. Claims 13-17 stand rejected under 35 U.S.C. § 103(a) based upon the published patent application of Howard (US 2002/0078244 A1, published on June 20, 2002) in view of Kano. Claims 18-20 and 24-30 stand rejected under 35 U.S.C. § 103(a) based upon Kano in view of Howard. Claims 21-23 stand rejected under 35 U.S.C. § 103(a) based upon Kano in view of Fleischmann (published patent application US 204/0078641 A1). Claim 33 stands rejected under 35 U.S.C. § 103(a) based upon Kano in view of “basichardware.com” in further view of Deshayes. For all of the reasons indicated below, Applicants respectfully, but most strenuously, traverse all of these rejections.

In order for the Examiner to best understand the unique and novel features of the present invention, attention is directed to the excerpt below from paragraph [0016] of the filed patent application:

In accordance with another aspect of the present invention, a method is provided for restoring a file system. This method comprises, during the file system restoration process, the step of changing, for each file restored, a file status indicator from an unrestored indication to a restored indication following the restoration of the file. This method also preferably includes the further step of permitting immediate access to a file for which the status indicator indicates that the file is in a restored state, even as the file system restoration process continues for other files. If an application program

accesses a file that is in the unrestored state, an event is presented to the file restore software which immediately and synchronously restores the file, turns the indicator to reflect a restored state and returns the event "complete." While this event is being processed, the application request to access the file is held in abeyance. When the event is complete, the application request is honored if the file has successfully been restored or denied if the restore failed for some reason (for example, there is a bad tape). Except for the slight delay, the application program is not aware that a file had to be restored for this purpose.....

The present invention exploits these facilities to provide the ability to restore damaged file systems. For files which are accessed during a file system restoration operation which have a status indicator set to reflect that it is in a restored state, full file system operations are allowed. In this manner, as much file access as is possible is permitted and carried out throughout the entire duration of the restoration process. In this way, continued application program execution using any file in the file system is possible as soon as the file system metadata is restored. Application execution may require an "on demand" restoration of data synchronous to the application request if the specific data requested has not yet been restored. It is no longer necessary for all of the application programs to have to wait until full file system restoration has been achieved.

In the present invention, the process is able to start from a destroyed file system and rebuild it from scratch. Rebuilding the file structures includes rebuilding the normal file system name tree including an indication whether the file is restored. This indicator is used to trigger an immediate restore if an application accesses the data and is not merely a loop marker for a backup program. The presently claimed process allows restarting applications as soon as the file system structures are built (not necessarily that the data is present) and do not depend upon advance knowledge of which application might use which data.

Embodiments of the present process suspend the application transparently to the user/application and do so on a micro time scale compared to techniques which require not running the application.

With this information in mind, the nine separate rejections are now considered in the same order as presented in the above-mentioned Office Action.

Claims 7, 9, 10 and 32

This is a rejection under 35 U.S.C. § 102(e) based upon Kano (US 2003/0135650 A1). It is noted that a rejection under 35 U.S.C. § 102(e) is a narrow ground of rejection that requires each and every aspect of the rejected claim to be found within the four corners of the document cited. As a preliminary matter in regards to this rejection it is noted that claim 10 has been cancelled herein and its recitations incorporated into claim 9 so as to more particularly describe and point out Applicant's invention. Nonetheless, the Examiner herein relies upon the following recitations from Kano to support a 35 U.S.C. § 102 rejection:

[0075] "Similar to the main process for backup, a file list 2000 for restore has a file name 2001 and a confirmation bit 2002. In the main process for restore, a confirmation bit "0" indicates "still not restored" and a confirmation bit "1" indicates "already restored". A user may select particular files from the file list 2000 and a list of selected files may be used as the file list 2000. The backup control module 220 selects a file from the file list and reads it from the tape (1902). The backup control module 220 transfers the read file to the agent module 141 via LAN 300."

[0076] "The agent module 141 writes in the file unit the transferred file in the restore volume via the FS module 145. After the file is written by the agent module 141 of NAS 100, the backup control unit 220 sets the confirmation bit 2002 of the file list 2000 corresponding to the restored file to "1" indicating "already restored" (1905). It is judged from the confirmation bit 2002 of the file list 2000 whether all restore files have already been restored (1906). If there is still a restore file, the flow returns to Step 1902. If all restore files in the file list 2000 have already been restored, i.e., if all the confirmation bits 2002 are "1", the main process for restore is terminated."

[0053] "(a) Upon reception of a restore request, NAS splits the secondary volume from the primary volume to use the secondary volume as a restore operation dedicated volume (restore volume) and continue the online operation with the primary volume."

Preliminarily, it will be shown that Kano does not teach disclose or suggest that a process in which **an unrestored file is accessed solely by file system structure information without data being present before the access request is made.**

The Kano application describes a technique for taking a point-in-time copy of a file system, which they describe as a resynchronization, followed by a split of the secondary volume from the primary volume. The secondary volume is then used for a backup process.

This is a minor deviation from the snapshotting techniques which have been used by many in the industry for years in that the secondary volume appears to be used for redundancy purposes when backup activity is not in progress. The cited portion of the Kano application ([0075]) addresses restore operations. It specifically calls for a list of files on the tape which is used to control the backup. During the restore operation, it cycles through this list restoring all files until the list is exhausted (last sentence of [0076]) or the list of files specified by the user ([0075], line 11) is exhausted. Note that nothing is specified here about the ability to access a file which has not yet been restored which is an important advantage provided by the present invention. Equally important is the ability to provide immediate recall of an off-line file as specified in claim 9. Note also that the indication of restored state for Kano is external to the file system in a restore application program and not contained in the file system affecting the processing of other applications. Kano uses a “confirmation” bit solely for the purposes of keeping track of which files have been restored and which files have yet to be restored. In contrast, similar information is used in Applicant’s claimed process as part of an attempt by an application program to access the file even though the restore process is still in progress.

In this regard, Applicant’s claim language, particularly as amended is instructive to consider: “creating an entry for a file with no attributes and no data and for which there is provided an indication that said file is in an unrestored state; accessing said file during file system restoration; and based on said indication determined from said accessing, listing a file name for said file.” It is thus seen that Applicant’s claimed process contemplates a restoration process in which there is first created a blank file structure with an indication as to whether or not that particular file has itself been restored and for which the data is valid. Furthermore, the present invention contemplates using that information to take immediate action. “[L]isting a file name” is a first step in the recognition of this immediately available use; other subsequent steps are recited in other claims. In particular, in the claimed process for accessing or restoration, a file with only a file structure marker but with no data is accessed. The presence of an indicator that the file is in an unrestored state is used to accomplish several things, such as temporarily suspending the application program which is accessing the file, initiating an immediate restoration of that file, and then providing the actual data to the accessing program.

It is important to keep in mind that the greatest benefits provided by the present process occur in the face of a catastrophic loss of data wherein many thousands of large files have to be restored. As pointed out in paragraph [0002] of Applicant's specification, such processes are expected to take upwards of 10 hours to complete. It would be very useful to have a process (as the present invention provides) that makes individual files available on an "as needed" basis during the 10 hour restoration period when called for by an application program. This enables customers who have suffered catastrophic failures, say due to a large electrical outage, to be "up and running" even as the restore operation proceeds. Using the present invention, customers do not have to wait 10 hours before they can begin data processing system operations. Should such a failure situation exist for a bank, it becomes very apparent that they would like to have their ATM networks up and running as soon as possible after a power failure.

In sum, it is seen that Kano does not teach disclose or suggest a process in which an unrestored file is accessed solely by file system structure information with no data being present **before** the access request is made. Since art that does not appreciate the problem being solved cannot teach solutions to the problem, it is clear that Kano fails to disclose the claimed solution. The notion of actually accessing an unrestored file during the restoration process is utterly lacking in Kano. However, it is clearly set forth in Applicant's claims, particularly as amended. Accordingly, it is seen that the rejection of Applicant's claims 7, 9, 10 (now cancelled) and 32, is not well founded. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 11

Attention is next directed to the rejection of claim 11 under 35 U.S.C. § 102(b) as being unpatentable based upon the issued patent to Sakaki et al., hereinafter referred to simply as Sakaki. Again, it is instructive to consider the language of the claim, particularly as amended herein: "A method of accessing a file system, said method comprising the step of **during restoration** of said file system containing entries for at least one **file with limited attributes and no data, upon access directed to said at least one file** in said system which possesses an indication of not yet being restored, removing said file from said file system and **skipping restoration** of said file."

The intent in claim 11 is to provide a process which allows an application to delete a file from the file system which is being restored prior to the file being deleted after it has been restored. Furthermore, the restoration process is one in which **no data is yet present, just file system structure including an indicator that the particular file is in an unrestored state**. In other words, if an application accesses a file with the intent of deleting it and if this happens during the restoration process, the restoration process skips the restoration of that file. Thus, if an application deletes the file, no restoration will take place. This keeps the system bandwidth from being wasted during the restoration process.

The most relevant citation from Sakaki appears to be the following from column 6, lines 18-24:

If the access is to a region where data migration has not been completed, the access from the CPU 10 is then judged to determine whether it is a READ or a WRITE access (Step 302). If the access is judged to be a READ access it is necessary to read in the data from the old CU [*disk controller*] 13 since the data does not exist in the new CU 11.

Firstly, it is noted that Sakaki is directed to data migration operations, not to file system restoration. As such it is not at all relevant. Secondly, as now more clearly indicated in Applicant's claim 11, there is included a recitation of a file system structure in which there is no data yet present. **This aspect is totally absent from the patent to Sakaki but is clearly recited in Applicant's claim 11.** While Sakaki undoubtedly assume the existence of a file system, their teachings are devoid of how one would go about restoring one. In fact, in the entire Sakaki patent there is not even a single reference to a "file." Thirdly, claim 11 deals with a situation in which a file is to be deleted. These aspects of the claimed invention are not found in any of the portions of the Sakaki patent to which the Examiner refers. The cited patent to Sakaki is essentially irrelevant to the process claimed.

Accordingly, it is seen that the rejection of Applicant's claims 11 based on the patent to Sakaki is not well founded. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 12

Attention is next directed to the rejection of claim 12 under 35 U.S.C. § 102(b) as being unpatentable based upon the issued patent to Mogul. Again, it is instructive to consider the language of the claim, particularly as amended herein: “A method of accessing a file system, said method comprising the step of **during restoration of said file system** containing entries for at least one **file with limited attributes and no data, upon access directed to said at least one file** in said system which possesses **an indication of not yet being restored**, adjusting scheduled file system restoration priority so that said accessed file is restored earlier within said scheduled sequence.”

The Examiner has directed Applicant to the following citation from the patent to Mogul (column 4, lines 15-24):

Prioritization information associated with the files may also be stored at the memory 42 with the identification indicia. The prioritization information determines the order in which the files will be restored. The prioritization information is also updated as data is written to, or removed from the bulk storage medium 32. Updating of files stored at the bulk storage medium 32 need not necessarily result in corresponding alteration of the identification indicia.

The only relevant portion of this patent is the reference to adjusting schedules to change priority. There is no mention whatsoever of the term “file system” in the patent to Mogul. There is no reference to restoring **file systems**. Restoring a file from a backed up copy is not the same thing as restoring a file system. There is no reference to a file system with limited structures. There is no reference to accessing a file while it exists only as a file structure element and an indication that it has not been restored.

Accordingly, since there are significant recitations found in Applicants claim 12 which are nowhere taught, disclosed or suggested by the patent to Mogul, the rejection of claim 12 is not well founded. Accordingly, it is respectfully requested that this rejection also be withdrawn.

Claims 1-6 and 31

Attention is next directed to the rejection of claims 1-6 and 31 under 35 U.S.C. § 103(a) based upon Kano and Deshayes. As with all rejections based on cited art, it is useful to consider the language present in the rejected claims. Here, claim 1 is representative: “A method of accessing a file system, said method comprising the steps of: creating an entry for a file **with limited attributes and no data** and for which there is provided **an indication that said file is in an unrestored state**; accessing said file **during file system restoration** ; and **based on said indication** determined from said accessing, **permitting file system operations** on said file, said operations being selected from the group consisting of (1) listing file names for any such file; and (2) removing any such file.”

The notion of accessing a file that has not been restored during a restoration process is a concept that is nowhere to be found in either of the cited documents. Furthermore, the concept of using a file system for accessing data when that data is not yet present in the file system is also seen to be totally lacking in both of the cited documents. As pointed out above, with respect to Kano, they use a “confirmation” indicator solely as a loop counter to make sure that all of the files are restored. The teachings of Kano do not extend to accessing data during the restoration process. In this regard it is noted that Applicant’s claim 1 specifically recites “**accessing said file during file system restoration.**”

With specific reference to the patent to Deshayes attention is directed to Figure 12 which is said to depict an embodiment of the claimed invention. Note specifically step 125 which recites that **the** application is taken off-line. At that point in time, the next step (126) “logically restore file from scratch area” is performed. Only after that step is **the** application put back on-line (step 127). **The clear and unequivocal teaching of Deshayes is that the files being restored are not available during the restoration process. This is exactly the situation which the present invention avoids.**

It is a well understood principle of patent law that art which teaches against that which one claims, cannot be used as a basis for rejecting claims to an invention which flies in the face of those teachings. Accordingly, it is seen that the combination of the teachings of

Deshayes cannot be logically combined with any other document to support a rejection of a claim which specifically recites **“accessing said file during file system restoration.”**

Moreover, however one construes the teachings of Deshayes, the base patent upon which the Examiner relies is fundamentally flawed in that their “unrestored file” indicator is used for an entirely different purpose. And again, there is no appreciation that access to a file is available before the completion of the entire restoration process. It is therefore seen that those of ordinary skill in the art having the cited documents before them would not in any way be led to a process in which there is an **“accessing [of] said file during file system restoration.”**

Furthermore, with respect to the patent to Deshayes, it is seen that the selection of which files to be backed up are application specific. The application and the files it accesses have to be identified ahead of time. In contrast, there is no such limitation in Applicant’s claimed process. It operates transparently and works for all files. There is no need to identify application program and files ahead of time. See Deshayes column 10, lines 5-11 set forth below:

“Once the particular application level files have been identified, at a step 92 and corresponding to the file system level 12, the file system level information is identified. This identification process determines the (file system level) volume locations of the information to be backed up. A corresponding entry 98b in the DDTAB file 98 is made for the file system information,” [Emphasis added herein.]

Accordingly, it is seen that Deshayes first requires the identification of one or more application programs. Following that, there is a requirement that files associated with those program be identified. Following that there is a subsequent requirement that file system level information for these files to be identified. In Applicant’s claimed process, there is no requirement that file system level information either be defined ahead of time or linked with specific files. Rather, in Applicant’s claimed invention a limited file structure is first created without data. No such step is taught disclosed or suggested by the art cited. In contrast, the art teaches requirements for application and file identification that are not only completely missing in Applicant’s claimed process but which are deliberately avoided.

For the convenience of the Examiner, the present inventor has provided a more detailed comparison of the differences between the present invention and the teachings found in Deshayes. These are summarized in the table below:

| <u>Deshayes</u> | <u>The present invention</u> |
|---|---|
| The starting point is a fully functional file system where the user wishes to restore a specified set of files. | The starting point is an empty set of disks after a catastrophic failure causing loss of the file system. |
| DDTAB is built to reflect the locations of files in a physical backup | The arrangement of the files in the backup is not relevant. A list of files is used to create a set of empty files in a file system |
| Specified files in the restore are copied. If a file has been deleted, it is probably restored anyway because that may be the user's intent. Applications are stopped during this process. | A process is begun to copy files to the file system. Applications may run at this point. If an application deletes a file, it is <u>really</u> deleted and not restored. This is a system rebuild and not a specific recovery of a few files. |
| It is not possible that an application may request a file that is not restored yet because the application has been stopped. This is possible because Deshayes believe that access to files is limited to specific known applications. This may be true for certain specific cases, but is not the general case | An application may request a file which is not yet restored. The data is immediately restored out of turn and the application allowed to proceed. The present invention suspends the application which is an automatic hold up of the application when an immediate restore of a specific unpredicted piece of data is needed. This is very different than stopping an application while a predicted piece of data is restored. |

For all of the reasons indicated above, it is seen that the art cited actually teaches away from that which is claimed. Accordingly, this art does not support a rejection of these claims under 35 U.S.C. § 103(a). It is therefore respectfully requested that the rejection of claims 1-6 and 31 based on Kano and Deshayes be withdrawn.

Claim 8

Attention is next directed to the rejection of claim 8 under 35 U.S.C. § 103(a) based upon Kano in view of Cary. As with all rejections based on cited art, it is useful to consider the language present in the rejected claims. Here is claim 8: "A method of accessing a file

system, said method comprising the steps of: **creating an entry for a file with no attributes and no data** and for which there is provided **an indication that said file is in an unrestored state**; **accessing said file during file system restoration** ; and based on said indication determined from said accessing, removing a file name assigned to said file.” This claim addresses the situation in which the accessing is for the specific purpose of deleting the file from the restoration process, as discussed in detail above.

With respect to the Kano patent application, as above, where their paragraph [0076] is discussed, it is again noted that their “confirmation bit” is a simple flag whose sole purpose is to determine when the restoration process is complete. There is no file access by an application during the restore process. However, Applicant’s claim 8 specifically recites: **“accessing said file during file system restoration.”** In this regard, the examiner’s attention is specifically directed to Kano’s Figure 9. It is clear from this flow chart that the only purpose of the “confirmation bit” is to determine when the loop ends. In contrast, it is seen that in the claimed process there is clearly recited **“an indication that said file is in an unrestored state,”** Furthermore, Applicants’ claim 8 goes on to recite: “based on said indication **determined from said accessing**, removing a file name assigned to said file.” Clearly, what the Examiner considers in Applicant’s claim to be analogous Kano’s “confirmation bit” is not treated in the same manner whatsoever. In the claimed invention, its utility arises during access to a file. The indicator is used to determine whether or not the application is to be given immediate access to the file (here for the purpose of deleting it) or whether it is a signal that the Application is to be suspended while an immediate, out-of-order restoration of the file is to be undertaken. Clearly the use is different as is the actions that occur depending on its value.

Accordingly, it is seen that the base document upon which the examiner relies (Kano) is fundamentally flawed. Whether or not it is combined with the teachings of Cary, it is nonetheless the case that at its heart the Kano document fails to teach that upon which the Examiner relies to support the rejection.

However, it is still recognized that the specific rejection in question is a rejection based upon combined art which includes the patent to Cary. It is clear from the Office

Action that the Examiner is only citing the patent to Cary for its recitation of a replacement or deletion step. These teachings cannot make up for the deficiencies already repeatedly pointed out above with respect to Kano. Even if Cary's teachings were combined with Kano's, there would still be no:

accessing said file during file system restoration;

creating an entry for a file with no attributes and no data.

However, these are clearly recitations found within the rejected claim. Accordingly, it is seen that those of ordinary skill in the art would not be led to include such items in a claimed restoration process since they are totally absent from both of the cited documents. Such circumstances do not support a rejection of any claims under 35 U.S.C. § 103. It is therefore very respectfully requested that the rejection of claim 8 based on Kano and Cary be withdrawn.

Claims 13-17

Claims 13-17 stand rejected under 35 U.S.C. § 103(a) based upon the published patent application of Howard (US 2002/0078244 A1, published on June 20, 2002) in view of Kano. Again the language of claim 13 is instructive for the purpose of pointing out differences: "A method for restoring a file system comprising the steps of: **creating an empty file system** in which file system inodes are marked to indicate that **neither file attributes nor file data are indicated as being restored**; initializing a namespace for the file system; restoring a root directory for the file system; restoring at least one file in said file system and **providing an indication that said file's attributes and data are restored**; and **accessing said file during said file restoration.**"

It is also incumbent in this response to point out that the Examiner asserts that page 3, paragraph [0038], lines 2-7 describe creating an empty file system. In fact they describe creating an object which may be part of a file as represented by a fileID (see paragraph [0035] for fileIDs and paragraph [0043] which describes multiple objects/fileIDs per file). The statement by the examiner which describes creating an empty file system is respectfully asserted to be incorrect.

As with the rejections above, the fact that the examiner has relied on the published patent application to Kano, it is seen that the material highlighted above, particularly **“accessing said file during said file restoration”** clearly recites a process step that is not found in Kano or in any of the other documents cited. Such circumstances do not support a rejection of any claims under 35 U.S.C. § 103. It is therefore very respectfully requested that the rejection of claim 8 based on Kano and Howard be withdrawn.

Claims 18-20 and 24-30

Claims 18-20 and 24-30 stand rejected under 35 U.S.C. § 103(a) based upon Kano in view of Howard. Again the language of claim 18 is instructive for the purpose of pointing out differences: “A method for restoring a file system comprising the steps of: **creating an empty file system** in which file system inodes are marked to indicate that **neither file attributes nor file data are indicated as being restored**; restoring said file system using a previously created table containing associated file names and inode numbers; and **processing in disjoint portions** by different data processing nodes, whereby said restoration is carried out in parallel.”

As with the rejections above, the fact that the examiner has relied on the published patent application to Kano, it is seen that the material highlighted above, particularly **“creating an empty file system”** clearly recites a process step that is not found in Kano or in any of the other documents cited. Such circumstances do not support a rejection of any claims under 35 U.S.C. § 103. It is therefore very respectfully requested that the rejection of claims 18-20 and 24-30 under 35 U.S.C. § 103(a) based upon Kano in view of Howard be withdrawn.

Claims 21-23

Claims 21-23 stand rejected under 35 U.S.C. § 103(a) based upon Kano in view of Fleischmann (published patent application US 204/0078641 A1). Again the language of claim 21 is instructive for the purpose of pointing out differences: “A method for restoring a file system comprising the steps of: creating an empty file system in which file system inodes are marked to indicate that neither file attributes nor file data are indicated as being restored;

and restoring at least one file in said file system in a fashion in which attributes for said file are restored but for which data for said file is restored at a later time.”

It is first noted that the paragraphs of the Fleischmann application upon which the Examiner relies, [0048] and [0060] have nothing whatsoever to do with “restoring at least one file in said file system in a fashion in which attributes for said file are restored but for which data for said file is restored at a later time.”

The highlighted portion above also describes a process step (as recited above) that is also missing from the base document upon which the Examiner relies. Thus, the present application and the subject claims clearly recites a process step that is not found in Kano or in Fleischmann. Such circumstances do not support a rejection of any claims under 35 U.S.C. § 103. It is therefore very respectfully requested that the rejection of claims 21-23 under 35 U.S.C. § 103(a) based upon Kano in view of Fleischmann be withdrawn.

Claim 33

Claim 33 stands rejected under 35 U.S.C. § 103(a) based upon Kano in view of “basichardware.com” in further view of Deshayes. Again the language of claim 33 is instructive for the purpose of pointing out differences: “A data processing system comprising: a central processing unit; a random access memory for storing data and programs for execution by said central processing unit; a nonvolatile storage device; program means for file system restoration, said program means being stored on a machine readable said program means including means for (1) creating an entry for a file with no attributes and no data and for which there is provided an indication that said file is in an unrestored state; (2) for accessing said file during file system restoration; and (3) for permitting, based on said indication determined from said accessing, file system operations on said file, said operations being selected from the group consisting of (a) listing a file name for said file; and (b) removal of said file.”

The differences between Deshayes and the subject patent, as emphasized by the highlighting above, have been amply discussed above in the table provided. With respect to the citation to “basichardware.com” is cited only for the most basic of propositions relating

to the stored program concept which is not related to the process recitations found within the latter portion of claim 33, as highlighted above. Such circumstances do not support a rejection of any claims under 35 U.S.C. § 103. It is therefore very respectfully requested that the rejection of claims 33 under 35 U.S.C. § 103(a) based upon "basichardware.com" in further view of Deshayes be withdrawn.

In closing it is noted that the amendments herein are being made as of right. It is also noted that the present response does not require the payment of any fees.

Should the Examiner wish to discuss this case with applicants' attorney, please contact applicants' attorney at the below listed number.

Respectfully submitted,



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